

Listing of Claims

1. (Currently amended) A transgenic plant comprising a plant transformation vector comprising a nucleotide sequence ~~that encodes or is complementary to a sequence that encodes a~~ HIO32.3 polypeptide comprising the amino acid sequence of SEQ ID NO:2, or an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2~~ortholog thereof~~, whereby the transgenic plant has a high oil phenotype relative to a plant of the same species that does not comprise the plant transformation vector~~control plants~~.

2. (Original) The transgenic plant of Claim 1, which is selected from the group consisting of rapeseed, soy, corn, sunflower, cotton, cocoa, safflower, oil palm, coconut palm, flax, castor and peanut.

3. (Original) A plant part obtained from the plant according to Claim 1.

4. (Original) The plant part of Claim 3, which is a seed.

5. (Previously Presented) A method of producing oil comprising growing the transgenic plant of Claim 1 and recovering oil from said plant.

6. (Currently amended) A method of producing a high oil phenotype in a plant, said method comprising:

a) introducing into progenitor cells of the plant a plant transformation vector comprising a nucleotide sequence that encodes ~~or is complementary to a sequence that encodes a~~ HIO32.3 polypeptide comprising the amino acid sequence of SEQ ID NO:2, or an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2~~ortholog thereof~~, and

b) growing the transformed progenitor cells to produce a transgenic plant, wherein said polynucleotide sequence is expressed, and said transgenic plant exhibits ~~an altered a high oil content~~ phenotype relative to a plant of the same species that does not comprise the plant transformation vector~~control plants~~.

7. (Original) A plant obtained by a method of claim 6.
8. (Original) The plant of Claim 7, which is selected from the group consisting of rapeseed, soy, corn, sunflower, cotton, cocoa, safflower, oil palm, coconut palm, flax, castor and peanut.
9. (Original) The plant of claim 7, wherein the plant is selected from the group consisting of a plant grown from said progenitor cells, a plant that is the direct progeny of a plant grown from said progenitor cells, and a plant that is the indirect progeny of a plant grown from said progenitor cells.
10. (Canceled) ~~A method of generating a plant having a high oil phenotype comprising identifying a plant that has an allele in its HIO32.3 gene that results in increased oil content compared to plants lacking the allele and generating progeny of said identified plant, wherein the generated progeny inherit the allele and have the high oil phenotype.~~
11. (Canceled) ~~The method of claim 10 that employs candidate gene/QTL methodology.~~
12. (Canceled) ~~The method of claim 10 that employs TILLING methodology.~~
13. (Canceled) ~~Meal, feed, or food produced from the seed of claim 4.~~
14. (Previously Presented) The method of claim 5, wherein the oil is recovered from a seed of the plant.
15. (Canceled) ~~A feed, meal, grain, food, or seed comprising:
a polypeptide encoded by the nucleic acid sequence as set forth in SEQ ID NO: 1;
an amino acid sequence as set forth in SEQ ID NO: 2; or
an ortholog thereof.~~
16. (New) The transgenic plant of claim 1, wherein the nucleotide sequence encodes a HIO32.3 polypeptide consisting of an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO: 2.

17. (New) The transgenic plant of claim 1, wherein the nucleotide sequence encodes a HIO32.3 polypeptide comprising the amino acid sequence set forth as SEQ ID NO: 2.

18. (New) The transgenic plant of claim 17, wherein the nucleotide sequence encodes a HIO32.3 polypeptide consisting of the amino acid sequence set forth as SEQ ID NO: 2.

19. (New) The method claim 6, wherein the nucleotide sequence encodes a HIO32.3 polypeptide consisting of an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO: 2.

20. (New) The method of claim 6, wherein the nucleotide sequence encodes a HIO32.3 polypeptide comprising the amino acid sequence set forth as SEQ ID NO: 2.

21. (New) The method of claim 20, wherein the nucleotide sequence encodes a HIO32.3 polypeptide consisting of the amino acid sequence set forth as SEQ ID NO: 2.